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Heart attacks ignore sex, age, genetics and culture

By CAROLYN ABRAHAM
From Monday's Globe and Mail

A landmark Canadian-led study has found that the causes of heart disease are the same in all people, regardless of age, sex, colour, culture or where they live.

The unexpected conclusion, based on research involving nearly 30,000 people in 52 countries, upends the view that gender, genetics, or ethnicity plays a major role in determining who suffers a heart attack.

Even project leader Salim Yusuf, who has devoted much of his career to links between disease and ethnicity, was surprised to learn that it is largely nurture, not nature, that predicts who will fall prey to the world's No. 1 killer.

"I expected to find differences in risk factors based on ethnicities, which we did not find. But I also never expected that we'd be able to explain 90 per cent of the global risk of heart disease," said Dr. Yusuf, director of the Population Health Research Institute at McMaster University and Hamilton Health Sciences centre.

The research team, which included colleagues from 262 centres on every inhabited continent, concluded that high levels of bad cholesterol and smoking were by far the strongest predictors, accounting for two-thirds of the world's heart attacks.

These were followed by high blood pressure, diabetes, abdominal obesity, stress, a lack of daily fruits and vegetables and a lack of exercise.

Together, these nine risk factors, all of which hold the alluring promise of being changed or modified, accounted for 90 per cent of heart-disease cases worldwide.

The finding "provides overwhelming proof to debunk" the so-called 50-per-cent myth, which suggests half the causes of heart disease are unknown because half the people who get it have no obvious risk factors,

said study contributor Sonia Anand, a clinician and associate professor of medicine at McMaster.

The data also explode other myths and reveal remarkable trends in the incidence of heart disease. Among them:

n Consuming more than three alcoholic drinks a week can moderately protect women from heart disease, a phenomenon other studies have already confirmed in men.

n Women tend to have their first heart attacks 10 years later than men.

n Having a paunch, or potbelly, is riskier than just being overweight.

n For non-smokers with good cholesterol levels, stress is the most powerful predictor of a heart attack.

n Men in the Middle East and South Asia suffer first heart attacks 10 years younger than men in Western Europe or China, perhaps due to better prevention strategies in the West.

n Cholesterol contributes to more than 74 per cent of heart attacks in Africa.

Fully explaining these trends demands further study, and researchers have yet to take into account socioeconomic risk factors.

But Dr. Yusuf said the most exciting prospect at the moment is that "this information tells us how to prioritize public-health campaigns by region," since some risk factors are more common in certain populations.

In China, for example, smoking is the major culprit, contributing to more than a third of heart attacks. But obesity in China is remarkably low, accounting for less than 6 per cent of cases.

In Western countries, including Canada, where smoking rates are declining, countering abdominal obesity should be the priority since it explains roughly 60 per cent of heart attacks.

"We cannot prevent people from dying, but we can prevent them from dying early," Dr. Yusuf said in an interview from Munich, where he presented his pivotal Interheart study yesterday to the European Society of Cardiology.

Alan Bernstein, president of the Canadian Institutes of Health Research, which backed the project, along with the Ontario Heart and Stroke

Foundation, praised the ambitious study for its international significance and its importance for Canada as a multicultural society.

"This isn't saying there aren't genetic contributions to heart disease," Dr. Bernstein said.

"But with this, a doctor can look at nine factors, with some very easy-to-test measures, way before a patient has a heart attack, and can say, 'You are going to have a heart attack.'."

Worldwide, heart disease kills 17 million more people than all cancers combined. But while prevention strategies are shrinking heart-disease rates in high-income countries, numbers in the developing world have skyrocketed.

In part, this is because deaths due to infection, with the exception of HIV-AIDS, have plummeted in lower-income countries. As citizens of the developing world live longer and become more Westernized, Dr. Anand said, heart disease is expected to be the leading killer by 2020.

For this reason, researchers felt the causes of heart disease had to be examined on a global basis. There was a feeling, Dr. Anand said, that most other studies had focused largely on white, middle-aged men in Western countries.

"So people thought maybe the causes are different in women, or in young people or in people from India or China," said Dr. Anand. "But now we see they're not." In fact, researchers discovered that a family history of heart disease increased the ability to predict heart disease by only 1 per cent. By comparison, lifestyle factors predict roughly two-thirds of cases.

This, Dr. Yusuf said, "means we should be able to prevent the majority of premature heart attacks in the world."